

Claims

1. A non-human animal that expresses a modified version of the gene coding for the gamma subunit of AMP-activated protein kinase (AMPK γ).

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2. The animal according to claim 1, wherein said animal is an invertebrate.

3. The animal according to claim 2, wherein said animal is an insect, preferably a fly.

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4. The animal according to claims 1 to 3, obtainable by a method selected from the group consisting of transposon insertion mutagenesis and chemical mutagenesis of the gene coding for the gamma subunit of AMP-activated protein kinase (AMPK γ).

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5. The animal according to claims 1 to 4, wherein said modified version of the gene coding for the gamma subunit of AMP-activated protein kinase (AMPK γ) is the *loechrig* (*loe*) mutation.

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6. The animal according to claims 1 to 5, wherein the expression of said gene results in an identifiable phenotype.

7. The animal according to claims 1 to 6, wherein said identifiable phenotype is related to lipid metabolism and/or is a neurodegenerative phenotype.

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8. The animal according to claims 1 to 7, wherein said animal expresses a gene coding for an amyloid precursor protein, or a modified version thereof, in particular a fragment or a mutant thereof.

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9. The animal according to claim 8, wherein said modified version of the gene coding for an amyloid precursor protein is a modified version of the gene coding for beta amyloid protein precursor-like (A β) protein.

10. The animal according to claims 8 and 9, wherein said modified version comprises a deletion, or a partial deletion, of the gene coding for beta amyloid protein precursor-like (A β) protein, wherein said deletion, or partial deletion results in a loss-of-function of said gene.

11. The animal according to any of claims 1 to 10, wherein said animal is transgenic for a modified version of the gene coding for the gamma subunit of AMP-activated protein kinase (AMPK γ) and/or a gene coding for an amyloid precursor protein, or a modified version thereof, in particular a fragment or a mutant thereof.

12. Use of an animal according to any of claims 1 to 11 for identifying a modulator which affects lipid metabolism.

13. Use of an animal according to any of claims 1 to 11 for identifying a modulator which affects a neurodegenerative phenotype.

14. Use of an animal according to any of claims 1 to 11 for identifying a modulator which affects processing of an amyloid precursor protein.

15. A method of identifying a modulator according to claims 12 to 14, comprising administering a substance, or a plurality of substances, to said animal; and observing the effect of said substance, or plurality of substances, on said animal.

16. The method according to claim 15, wherein said substance, or plurality of substances, is orally administered to said animal.

17. Use of an animal according to any of claims 1 to 11 for identifying whether a gene, or a mutant thereof, is capable of modulating a phenotype related to lipid metabolism and/or neurodegeneration, in particular processing of an amyloid precursor protein.